25. (New) A navigation method according to claim 23, wherein the first predetermined condition is a condition of no navigation operation.

26. (New) A navigation method according to claim 23, wherein the first predetermined condition is a condition that a user instructs the defragment operation.

27. (New) A navigation method according to claim 23, wherein the second predetermined condition is a condition that the defragment operation is completed.

28. (New) A navigation method according to claim 23, wherein the second predetermined condition is a condition of an engine-stop of a vehicle in which the navigation apparatus is installed.

REMARKS

Claims 1-16 have been examined, and claims 1-7 and 16 have been rejected under 35 U.S.C. § 102(e). Also, the Examiner has indicated that claims 8-15 contain allowable subject matter.

I. Preliminary matters

A. Objection to the specification

The Examiner has objected to the specification because it contains minor typographical errors. Applicants submit that the amendments to the specification overcome the objection.

B. Objection to the claims

The Examiner has objected to claim 14 because it contains a minor typographical error. Applicants submit that the amendments to the claim overcome the objection and do not change the scope of the claim. Claim 5 has also been amended to correct a typographical error, and the scope of the claim remains unchanged.

C. Objection to the drawings

The Examiner has objected to Figs. 4-6 because they contain minor typographical errors. Applicants submit that the proposed drawing corrections, submitted concurrently herewith, overcome the objection.

II. Rejection under 35 U.S.C. § 102(e) over U.S.P. 6,073,076 to Crowley et al. ("Crowley")

Claims 1-7 and 16 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Crowley. Applicants submit that the claims are patentable over the reference.

A. Claim 1

Applicants submit that claim 1 is not anticipated (and would not have been obvious over) Crowley. For example, the claim relates to a navigation system that comprises a nonvolatile storage device and a defragmenting processing device. The nonvolatile storage device contains map data, and the defragmenting processing device performs defragmenting processing with the nonvolatile storage device. Thus, the nonvolatile storage device that contains the map data is subjected to the defragmenting processing.

On the other hand, Crowley does not disclose or suggest such feature. For example, Fig. 1 of the reference illustrates a navigation system 10 that comprises a non-volatile memory storage device 16 and a non-volatile storage medium 32. The storage device 16 contains application software programs and configuration parameters, and the storage medium 32 contains map data. (Column 3, lines 17-22 and 57-67).

In addition, as shown in Figs. 1, 5, and 6, the navigation system comprises a RAM 20, and the RAM 20 comprises a parcel cache 207 having various buffers 220. Also, each buffer 220 comprises blocks 224, and each block comprises pages 222. As described in column 17, defragmentation is performed on the buffers 220 within the parcel cache 207.

Accordingly, in Crowley, defragmentation is performed on buffers 220 within a RAM 20 and thus, is not performed on a non-volatile memory. Therefore, Applicants submit that claim 1 is patentable over Crowley.

B. Claims 2-7 and 16

Since claims 2-7 and 16 depend upon claim 1, Applicants submit that they are patentable at least by virtue of their dependency.

III. Allowable subject matter

The Examiner has objected to claims 8-15 for being dependent upon rejected base claim 1, but indicates that they would be allowable if they are rewritten in independent form. Since claims 8 and 10-13 have been rewritten in independent form, Applicants submits that claims 8-15 are allowable.

IV. Newly added claims

Applicants have added new claims 17-28 to provide more varied protection for the present invention.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 1, second full paragraph bridging pages 1 and 2:

In general, a hard disk uses a filing system in which files corresponding to data to be stored are basically assigned to a continuous empty area and arranged therein. However, when the remaining empty areas of the hard disk are reduced due to the fact that a large number of files have been written, a file that should be stored subsequently is written in the remaining empty areas in such a condition that data are divided into small discontinuous fragments, not written in a single [continuos] continuous area. When the files of which data are stored in divided areas are read out, an access speed to those files is inevitably lowered.

Page 2, second full paragraph bridging pages 2 and 3:

However, when executing the defragmenting process in the hard disk mounted in a navigation system, there is a fear that there may occur various types of interference with the performance of the defragmenting process, like cases that an engine stops in the course of execution of the defragmenting process, or reading out map data from the hard disk, becomes necessary, because the navigation is started. It is difficult for users to predict by themselves such occasions of interference before or after starting the defragmenting process, thus being much burden on users. The defragmenting process is no longer done effectively in the hard disk, thus [it taking] it takes much time to read files of map data. There is a problem that a merit of a hard

disk, which is inherently high is access speed, cannot sufficiently be utilized for navigation which should be performed at a higher speed.

IN THE CLAIMS:

The claims are amended as follows:

5. (Once amended) The navigation system according to claim 1, further comprising an operation device with which executing the defragmenting processing in the storage device is able to be ordered, wherein the defragmenting processing device [performes] performs the defragmenting processing in response to the instruction of execution from the operation device.

8. (Once amended) A [The] navigation system [according to claim 7, further comprising] performing navigation based on a detected current position and map data, the navigation system comprising:

a storage device, which is nonvolatile, from and into which files of map data are able to be read and written;

a navigation control device for controlling a navigation operation using the map data; and

a defragmenting processing device for performing a defragmenting processing with the storage device at a predetermined time,

wherein the defragmenting processing device interrupts the defragmenting processing if a given condition is fulfilled during executing the defragmenting processing,

wherein the defragmenting processing device preserves defragmenting progress data indicative of a progress condition of the defragmenting processing if the defragmenting processing under performance is interrupted, and

wherein the navigation system further comprises an engine sensor for detecting an operated state of an engine of a vehicle, wherein the defragmenting processing device not only monitors an output of the engine sensor during executing the defragmenting processing but also interrupts the defragmenting processing in response to a stop of the engine.

10. (Once amended) A [The] navigation system [according to claim 7,] performing navigation based on a detected current position and map data, the navigation system comprising:

a storage device, which is nonvolatile, from and into which files of map data are able to be read and written;

a navigation control device for controlling a navigation operation using the map data; and

a defragmenting processing device for performing a defragmenting processing with the storage device at a predetermined time,

wherein the defragmenting processing device interrupts the defragmenting processing if a given condition is fulfilled during executing the defragmenting processing,

wherein the defragmenting processing device preserves defragmenting progress data indicative of a progress condition of the defragmenting processing if the defragmenting processing under performance is interrupted, and

wherein the defragmenting processing device interrupts the defragmenting processing when the navigation is activated during execution of the defragmenting processing.

11. (Once amended) A [The] navigation system [according to claim 5, further comprising] performing navigation based on a detected current position and map data, the navigation system comprising:

a storage device, which is nonvolatile, from and into which files of map data are able to be read and written;

a navigation control device for controlling a navigation operation using the map data;

a defragmenting processing device for performing a defragmenting processing with the storage device at a predetermined time;

an operation device with which executing the defragmenting processing in the storage device is able to be ordered, wherein the defragmenting processing device performs the defragmenting processing in response to the instruction of execution from the operation device; and

a readout device for reading out the map data from a recording medium in which the map data are recorded,

wherein the navigation control device executes a navigating operation based on the map data read out by the readout device when the navigation is under operation based on the map data stored in the storage device at a time when the execution of the defragmenting processing is ordered by the operation device, and

the defragmenting processing device executes the defragmenting processing in the recording medium.

12. (Once amended) A [The] navigation system [according to claim 5, further comprising] performing navigation based on a detected current position and map data, the navigation system comprising:

a storage device, which is nonvolatile, from and into which files of map data are able to be read and written;

a navigation control device for controlling a navigation operation using the map data;

a defragmenting processing device for performing a defragmenting processing with the storage device at a predetermined time;

an operation device with which executing the defragmenting processing in the storage device is able to be ordered, wherein the defragmenting processing device performs the defragmenting processing in response to the instruction of execution from the operation device;

a readout device for reading out the map data from a recording medium in which the map data are recorded; and

an ordering device for ordering execution of a navigating operation,

wherein the navigation control device executes the navigating operation based on the map data read out by the readout device when activation of the navigating operation is ordered by the ordering device during the defragmenting processing in the storage device by the defragmenting processing device.

13. (Once amended) A [The] navigation system [according to claim 5, further comprising] performing navigation based on a detected current position and map data, the navigation system comprising:

a storage device, which is nonvolatile, from and into which files of map data are able to be read and written;

a navigation control device for controlling a navigation operation using the map data;

a defragmenting processing device for performing a defragmenting processing with the storage device at a predetermined time,

an operation device with which executing the defragmenting processing in the storage device is able to be ordered, wherein the defragmenting processing device performs the defragmenting processing in response to the instruction of execution from the operation device;

a readout device for reading out the map data from a recording medium in which the map data are recorded; and

an ordering device for ordering execution of a navigating operation,

wherein the defragmenting processing device interrupts a defragmenting operation when the recording medium is unloaded in the readout device as well as activation of the navigating operation is ordered by the ordering device during the defragmenting processing in the storage device by the defragmenting processing device.

14. (Once amended) The navigation system according to claim 13, wherein the navigation control device issues a message [massage], after the interruption of the defragmenting [processig] processing, for urging a user to load the recording medium in which necessary map data are recorded, and the defragmenting processing device restarts the defragmenting processing based on the defragmenting progress data at a time when the recording medium is loaded.